

ONLINE GRADUATE STUDENTS' UNDERSTANDING OF INFORMATION ETHICS ISSUES: AN EXPLORATORY STUDY

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Abstract

This exploratory study employed a qualitative multiple case study design to investigate how online doctoral students understood the construct of information ethics (IE) within the context of academic research. Findings indicated varied levels of understanding of IE issues, and that more exposure to IE concepts is needed, even in doctoral education. While most of the participants in this study applied these concepts adequately in their writing, some needed a significant level of additional training. Study results may be used as a basis for policy and curriculum development to educate and promote awareness, and to decrease the incidence of IE violations.

Introduction

Students appear to have a varied, and sometimes weak, understanding of IE issues, even within the confines of academic study. Tatsumi and Yasunari (1998) contended that the concept of IE is poorly defined and not understood, and the literature indicated general confusion, lack of awareness, or differing perceptions about which behaviors constitute unethical behavior (Ashworth, Bannister, & Thorne, 1997; Davis, 1992; Kuehn, Stanwyck, & Holland, 1990; May & Loyd, 1993; Paterson, Taylor, & Usick, 2003; Stern & Havlicek, 1986; Szabo & Underwood, 2004). In order to design interventions to address these concerns, it is first necessary to understand how students understand and experience IE issues within the confines of their academic studies.

Study Questions

This study was guided by one overarching question: How do online doctoral students define, experience, and understand the construct of IE as it relates to their academic studies? Supporting questions are listed below:

1. How do students define IE in its broadest sense?
2. What specific IE issues do students see as applicable to doctoral study, and how well do they understand these issues?

3. What information is available to students about IE issues at the university, and how aware are they of institutional policies and procedures regarding IE issues?
4. How do students perceive IE violations and how does the online environment affect their perceptions?
5. How do students feel IE violations should be dealt with at the university?
6. Are students able to apply knowledge of IE issues in their work?

Research Methods and Design

The methods and procedures in this study were guided by approaches described in educational qualitative research resources such as Merriam (1988) and Creswell (1994). Study participants included eight adult students enrolled in online doctoral programs at one online university. The participants in this study were easy and willing subjects in order to maximize what could be learned in a limited amount of time. Yin (1994) advocated six to ten cases as sufficient to “provide compelling support for the initial set of propositions” (p. 46).

Data Collection

Data were collected from three sources: in-depth semi-structured interviews, student-produced artifacts, and existing university documentation. A semi-structured interview guide was developed based on the author’s personal experiences and a review of the literature. Existing data from the university included pages on the university Web site that most likely referenced IE issues. Sources chosen for analysis were those that all students would have access to, or samples of similar documents. Student-produced artifacts included drafts of student work. These were requested from students before or during the interview process and were analyzed to illustrate adherence to IE guidelines.

Data Analysis

Analysis of these three data sources employed a combined coding strategy. Once interviews were transcribed, data was auto coded in Nvivo7 according to interview questions, since these were fairly uniform for all of the interviews. The researcher then went through transcripts line by line to generate additional categories. This inductive approach is known as open coding, and is often used in grounded theory research (Corbin & Strauss, 1990). As themes or patterns emerged in the interview process, the researcher used axial coding to reorganize concepts in a more abstract fashion (Corbin & Strauss, 1990).

Existing university data that referenced IE issues was analyzed using content analysis to determine the extent and availability of information provided to students on IE issues. The primary purpose was to explore the content and nature

of information provided to students on IE issues, which put data into two main categories: content and type of information. These two categories reflected the two typologies discussed Guba and Lincoln (1981), the “‘what is said’ (or subject matter) dimension and the ‘how it is said’ (or device) dimension” (p. 244).

The researcher and an additional blind reviewer analyzed student artifacts to illustrate adherence to general IE guidelines related to the research and writing process. Because of the subjectivity of this activity, annotations were used to mark violations and describe the rationale for them being coded as violations. One document was removed from the list because it did not fit the parameters for the study.

Ethical Considerations

Qualitative research requires strict adherence to ethical considerations. This was particularly important in a study of this nature, as this topic had the potential to bring sensitive issues to the forefront. Participants’ rights, desires, and values were considered first when choices were made with regard to how the data were reported. Their identities and the identity of the institution remained confidential in order to protect their privacy and ensure there were no repercussions for their statements. Pseudonyms were used in the final report, and no identifying information was included.

Study Verification

To enhance the rigor and increase trustworthiness of the study, portions of Lincoln and Guba’s (1985) framework were incorporated, including the use of triangulation, peer examination, and member checks, and the compilation of an audit trail. Triangulation was executed by collecting a variety of data covering different events and relationships from different perspectives. Multiple data sources included interviews, existing documentation, and student-produced artifacts. Merriam (1988) described the peer examination process as “asking colleagues to comments on the findings as they emerge” (p. 169). A colleague external to the study conducted the peer examination. This person had a general understanding of the nature of the study and reviewed perceptions, insights, and analyses with the researcher. Member checking was conducted both informally during the interview process, and formally, after data collection was complete. Participants were provided the opportunity to view copies of their verbatim transcripts in order to ensure credibility of the data. They were also given the option to review and critique findings and conclusions to ensure they reflected reality as the researcher saw it. While this study did not actually undergo a formal audit by an external reviewer, an audit trail was kept by the researcher. Presenting a clear depiction of the methods used enables an external auditor to establish whether or not the conclusion and interpretations can be linked to their sources and are supported by the inquiry. This detailed account of the study process will

enable an external auditor to follow the study process, determine level of researcher bias, establish procedures for ensuring credibility, and ascertain whether interpretations and findings can be linked to their sources and are supported by the inquiry.

Results and Discussion

This exploratory study provided evidence that there are varied levels of understanding of IE issues. Participants were most comfortable discussing topics covered by the university; this indicates that the university has some influence over their knowledge and application of these issues. Ironically, some IE topics covered by the university were also those applied incorrectly by students in their work. While most were able to apply IE concepts adequately in their writing, some needed a significant level of training in this area. These findings indicate that even at the doctoral level, there needs to be formal, consistent, and repeated education or training on IE issues. Each category discussed below illustrates major themes covered during the interview process. Included in the category title is the research question number that corresponded with each. With the exception of the IE violations category, which was based solely on the perceptions of participants, each category finding was corroborated by at least two data sources. This prevented reliance on a single data point and thus helped neutralize bias inherent in any one source.

Category 1: Broad Conceptualization of IE (Study question 1)

Category 1 dealt with participants' definition of the term *information ethics* in its broadest sense. This study used Smith's three-part working definition of IE for comparison (1993, p. 7). Smith's definition included IE "as a field of applied ethics [dealing with issues such as] the ownership of information, access to information, and the security of information, which includes privacy, confidentiality, and data integrity." This definition also considered "specific issues and cases. . . various tools of analysis to study them, and. . . strategies for decision-making, in both public and private settings, at personal, local, national, and global levels." The third part of the definition dealt with IE "as a subfield in the philosophy of information. . . concerned [with defining] the nature and function of information in society, [describing] its goals and purposes, and [clarifying] how information is known and understood."

Participants tended to have difficulty thinking of this construct as a whole, but had an easier time breaking it down and discussing specific issues. Even though they were asked to think about this term in its broadest sense, their definitions tended to focus on the application portion of this definition, citing specific issues or examples of IE violations, such as plagiarism, data misrepresentation, or

documentation. Specific topics brought up in both this category and the next were related to their careers or field of study, or to topics covered heavily in existing university documentation. The broadest definitions provided dealt with how information was utilized or communicated to others. This fit most closely within the second portion of the definition dealing with IE in terms of specific cases or in specific settings, as evidenced by mention of the use of information over specific media or in academic studies.

The question here becomes: should/why should students possess this knowledge or understand and apply this broad concept? The construct of IE is applicable to all fields. Analogous to the domain of information literacy, IE should be “part of the profile of a life-long learner and. . .and important element of the teaching-learning process” (Bruce, 1997, p. 2). Just as “changes in the world have seen a sufficient justification for the introduction of the concept of information literacy” (Bruce, 1997, p. 2), they also present similar rationale for IE instruction. This knowledge base becomes even more paramount at the doctoral level, where the use, creation, and manipulation of information is carried out in a more advanced and comprehensive fashion.

Category 2: IE — Academic Concerns (Study question 2)

It was assumed that at the doctoral level, students should have a basic understanding and awareness of IE issues and be able to follow general and institutional protocols related to ethical, legal, and social concerns. At the very least, students should be aware of relevant issues and know where to find more information about them. Most of the topics mentioned here fell into the categories of property/ownership and accuracy; these were also those that were most heavily emphasized by university documentation. Their comfort with these topics was demonstrated in the interviews by extensive personal vignettes, which offers welcome evidence that the university influences awareness and knowledge of IE issues. They were less comfortable with the topics of privacy, security, and accessibility, which were also issues covered least by the university.

There were several areas of concern that arose in this discussion. The main concern was students’ lack of ability to determine the quality of information. This is an essential skill at all levels of graduate study, but particularly at the doctoral level, where extensive scholarly research is conducted. Only one participant was clearly able to describe standard evaluation criteria, and there appeared to be over-emphasis by many on peer-review as the sole determinant of quality. Some of the discussion indicated incorrect assumptions and/or unfounded confidence in some of the criteria they used to evaluate resources. While this is a skill that should be taught at an increasing level of complexity starting in grade school, it appears that many are entering doctoral study without the necessary level of proficiency needed to complete doctoral-level work. This complements other studies that have

noted information literacy or library research capabilities of doctoral students lacking (Morner, 1993; Murry, McKee, & Hammons, 1997).

Adding to this concern was participants' reports of inconsistent information provided by various university entities on both IE and non-IE issues. It is not uncommon for faculty to have varying levels of familiarity with these topics; therefore, it would not be a surprise, particularly in a virtual setting, if faculty were providing inconsistent information about evaluating source quality. While fairly detailed information is provided on this topic on the library Web site, like other documentation, students may not be aware of its existence or may not fully understand it even after reading it. Finally, it may conflict what specific faculty members are telling them.

The other area of concern dealt with issues that participants were unfamiliar with or did not know enough about to define or describe. The concept of fair use was one example; participants were vaguely familiar with this term but could not actually define it. While the ability to define this or other related terms (e.g., copyright) is not necessary, one should have a basic understanding of this concept before writing a dissertation. At the very least, students should know which university entities they might consult with questions about these issues.

All of these concerns present opportunities for additional instruction and/or documentation. Avenues for instruction at X University can take place in multiple venues, including the virtual classroom or seminars at academic residencies. In addition, more comprehensive documentation that specifically addresses these issues might be developed as part of a comprehensive program to deal with IE issues, which merge with those of academic integrity and information literacy.

Category 3: IE Violations (Study questions 4 and 5)

When participants were asked why they thought people engaged in IE violations, they cited many of the issues found in the literature, including convenience or laziness, lack of understanding of the issues, stress or deadlines, and intentional acts performed by students who were confident that they could get away with it. Three participants also cited societal influence as a contributing factor. When asked about incentives in place for students to avoid IE violations, all cited personal values and/or fear of consequences as primary reasons.

Participants all agreed these issues varied with regard to seriousness and that IE violations were punishable offenses. The dominant themes in both threads of this discussion were intent and impact on others' well-being; however, intent appeared to be the deciding factor with regard to the seriousness of the infraction and the severity of the consequences for the action.

Category 4: Institutional Coverage of IE Issues (Study question 3)

The bulk of the information provided by the university on various IE issues focused on two main topical categories. These were (a) property/ownership and academic honesty, which covered subcategories such as plagiarism, citation, paraphrasing, fair use, and reuse of previous work; and (b) accuracy, which covered information quality. Issues from these two categories were emphasized most heavily in the interviews. Regarding the nature of the information provided, the majority of content was either description/definition of the issue, followed by examples and policy information. When asked about formal rules or policies, all participants noted that they existed, but there was uncertainty as to where to locate them in some cases.

The main concerns about the institution were the consistency of information provided, which was addressed in category 2, conflicting information, which is discussed in category 5, and participants' uncertainty as to where to locate information on or ask questions about some of these issues. Participants advocated repetition and/or multiple modes of presentation, citing written documentation, coverage in required courses, and communication of these issues by individual faculty as possible avenues for dissemination. This was implied as necessary to enable more complete understanding of these concepts. While documentation is important, serving as a foundation for which to reference, review, etc., it is not enough by itself. Some noted in the interviews that they either do not read or do not want to read the material. Others said they only use it for reference, which is acceptable, as that is one of its purposes.

Category 5: Perceptions of Institutional Response to IE Issues (Study questions 3 and 4)

Participants were generally positive about how X University handled IE issues, and thought the university placed due emphasis on these areas. The primary complaint here was that they were receiving conflicting information from different sources on issues that were both IE and non-IE related. This illustrates one of the challenges to a virtual setting, where students, instructors, and administrative staff are geographically dispersed, and underscores the importance of regular and consistent dissemination of information. While university documentation of IE issues was fairly consistent, the human element presented a problem. One example is when students approach multiple people or departments with the same question and get different answers. Once again, this presents the opportunity for additional instruction and documentation, as well as more thorough training for all university faculty and staff.

Category 6: Application of IE Concepts (Study question 6)

This category of findings illustrated how students actually applied what they knew in their writing and in their handling of hypothetical situations in which they

would have to make decisions about IE issues. The analysis of their work provided an interesting snapshot of the research process and indicated that more instruction is needed for some in this area. Most of their work contained IE violations that would be expected in draft work, such as incomplete or incorrect citations or imperfect source documentation. More than one document, however, included numerous IE violations throughout that varied significantly in severity. Of concern here was the fact that these types of infractions could potentially go unnoticed by faculty. In a later stage or final draft, this represents a serious problem. In a discussion of the drafting process, one participant explained that she would typically copy and paste large quantities of text from various sources, and then go back and “fix it” so that it would be correctly documented later. This so-called patchwriting, if not documented appropriately and without evidence of original thought, is considered by some to be a type of plagiarism. From this discussion and in reviewing drafts of student work, it appears that more in-depth instruction is needed on both the drafting process and on individual topics such as plagiarism and documentation. More holistic instruction in this area should encompass both proper documentation procedures and the reasons why attribution is important, including the benefits to a study when done correctly. Awareness and understanding of these concepts will foster more careful note-taking and drafting, which, in turn, will help students avoid other infractions and improve the entire writing process.

Several hypothetical scenarios covering a variety of IE issues encountered in higher education were presented to participants. These included plagiarism in a collaborative work setting, reuse of previous work, attribution for publications with multiple authorship, and general research conduct. Even in cases where participants made correct choices, their rationale for these choices was sometimes faulty, and some were not sure to whom questions on these topics should be addressed.

The case dealing with plagiarism in a collaborative work setting brought forth confusion about responsibility in group projects. All participants identified individual accountability for their own work, but there was disagreement about what happens when there are problems with another group member. This indicated that there might not be enough information provided on these issues in their coursework. This is particularly important in a virtual environment, where group work is problematical by different time zones, cultural factors, and expectations.

In considering what type of attribution should be given to individuals who contributed to a study or paper, all agreed that decisions concerning authorship should be made at the outset of the study. Participants were willing to acknowledge people who had contributed to a study, but no one recognized contributors as authors unless they had done any writing. In reality, authorship

guidelines vary depending on institutional or source publication policy, disciplinary tradition, professional standards, and the nature of the relationship between authors and contributors. This more simplistic view of authorship could be attributed to lack of experience in this area for some. It would be advantageous for doctoral students, many of whom will be establishing publication records, to be exposed to general guidelines on authorship and attribution. This information was not found in university documentation.

The scenario on research conduct was the source of most uncertainty. All participants advocated being very explicit about the procedures followed when doing research, thoroughly documenting the process, and providing rationale and justification for their decisions. However, this scenario dealt with the ownership of information created in a laboratory. The idea of laboratory settings and grant-funded research was a gray area for some in this group, and may be for many students. This case touched on several issues, including the collaborative relationship between research partners, institution or employer versus employee-owned information, misconceptions about funding agency policies, proprietary interests, and intellectual property issues, such as who actually owns data created during research and who owns ideas, and of course, the legal ramifications of all of these issues. The author of this paper agrees with Fishbein (1991) in his recommendation that institutions clearly state their policies regarding the ownership of data. The term ownership can refer to both possession of and/or responsibility of data. While the university does address ownership of information on its Web site in its IT policies, it does not address the ownership of research data. When queried about ownership of their own work, participants were tentative in their responses, as well; most were “pretty sure” the work they completed for school belonged to them.

Recommendations for Action

Recommendations for action based on this exploratory study stemmed from inconsistencies in participants’ definitions and perceptions of the issues, lack of understanding of some issues, and the allegation of inconsistent information received from the university. This is particularly critical in a virtual setting, where numerous people in multiple locations can compound this effect. The primary recommendation is a comprehensive program that deals with IE issues in concert with academic integrity and information literacy. This program will help alleviate unintentional IE violations that occur, as these most likely make up the majority of infractions. Every educational institution is unique, and student bodies have their own cultures, local communities, policies, etc. Before implementing measures to address IE as a whole, it is important to understand the students at a particular institution and the reasons and motivations for their actions. The participants in

this study claimed personal accountability and responsibility for their actions; most cited students as ultimately responsible for preventing IE violations, followed closely by faculty. They felt that faculty should play a major role in being responsible for dealing with these violations when they did occur and in dealing with each student on an individual basis. However, these students were all native students, and students from different cultures may have very different perspectives. Hayes and Introna (2005) conducted a study of international students' cultural values toward academic integrity issues, such as plagiarism and cheating on tests. Their research showed that dishonest behavior is "often the outcome of many diverse and complex influences" (p. 229). They call for academics in Western institutions to develop awareness of these issues and provide resources for these students as part of larger "institutional frameworks...that are sensitive to the issues of culture and alienation" (p. 230). This calls for clear and comprehensive policies and procedures for detecting, reporting, and responding to IE violations in a fair and equitable fashion for students of all backgrounds.

Conclusion

Institutions of higher education have a unique responsibility to instill values of honesty and integrity in their students, and this starts with ethical scholarship. This topic is timely, in light of evidence that dishonest behavior is increasing, fueled by technology and negative societal influences. Understanding how individuals understand and experience these issues, which was the focus of this study, will help institutions promote broader awareness of these issues and develop measures to decrease violations. Johns, Chen, and Hall (2004, p. 188), wrote that "...ethics extend beyond formal research, and encompass all levels of life. . .and that "ethical behavior is inherent in, and essential to, scholarship."

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